WHAT IS CLAIMED IS:

1. An optical device, comprising:

a membrane configured to be electrically deformable and reflective and positioned over a cavity located within a substrate;

a transmissive spacer coupled to said substrate and located over said cavity; and

a lens coupled to said transmissive spacer and optically aligned with said membrane.

2. The optical device as recited in Claim 1 further comprising a fiber holder coupled to said lens.

3. The optical device as recited in Claim 1 wherein said membrane is located over a first substrate having a first alignment mark and said transmissive spacer is formed from a second substrate having a second alignment mark that corresponds to said first alignment mark to provide alignment of said first substrate with said second substrate.

4. The optical device as recited in Claim 1 wherein said transmissive spacer comprises a material selected from the group consisting of:

silicon;

ceramic;

fused silica; and

infrared-transparent optical glass.

5. The optical device as recited in Claim 1 wherein said transmissive spacer forms a lumen between said lens and said membrane and wherein said lumen contains air or an inert atmosphere or wherein at least a partial vacuum exists between said lens and said membrane.

6. The optical device as recited in Claim 1 wherein said transmissive spacer has a thickness substantially equal to a focal length of said lens.

7. The optical device as recited in Claim 1 further comprising terminals on an exterior of said optical device and connected to said membrane and configured to provide an electrical current to said membrane.

8. A method of manufacturing an optical device, comprising:

positioning a membrane configured to be electrically deformable and reflective over a cavity located within a substrate;

coupling a transmissive spacer to said substrate such that said transmissive spacer is located over said cavity; and

coupling a lens to said transmissive spacer and optically aligned with said membrane.

9. The method as recited in Claim 8 wherein positioning further includes positioning a plurality of said membranes over a corresponding one of a plurality of cavities located in said substrate, and wherein coupling a transmissive spacer further includes coupling a transmissive spacer to each of said membranes, and coupling a lens includes coupling a lens to each of said transmissive spacers, and the method further includes coupling a fiber holder to each of said lenses.

10. The method as recited in Claim 8 further comprising coupling a fiber holder to said lens.

11. The method as recited in Claim 8 wherein said membrane is formed on a first substrate having a first alignment mark, and said transmissive spacer is formed from a second substrate having a second alignment mark, and wherein coupling said transmissive spacer includes coupling said second substrate to said first substrate by using said first and second alignment marks.

12. The method as recited in Claim 8 wherein coupling a lens includes coupling a lens that has focal length substantially equal to a thickness of said transmissive spacer.

13. An optical system, comprising:

an optical transmitter;

an optical receiver; and

an optical device array, including:

membranes each configured to be electrically deformable and reflective and positioned over a corresponding one of a plurality of cavities located within a substrate;

a transmissive spacer coupled to said substrate and located over each of said cavities; and

a lens coupled to each of said transmissive spacers and optically aligned with each of said membranes.

14. The optical system as recited in Claim 13 further comprising a fiber holder coupled to each of said lenses.

15. The optical system as recited in Claim 13 wherein said membranes are located over a first substrate having a first alignment mark and said transmissive spacers are formed from a second substrate having a second alignment mark that corresponds to said first alignment mark to provide alignment of said first substrate with said second substrate.

16. The optical system as recited in Claim 13 wherein each of said transmissive spacers comprises a material selected from the group consisting of:

silicon;

ceramic;

fused silica; and

infrared-transparent optical glass.

17. The optical system as recited in Claim 13 wherein each of said transmissive spacers forms a lumen between each of said lenses and each of said membranes and wherein each of said lumens contains air or an inert atmosphere or wherein at least a partial vacuum exists between each of said lenses and said membranes.

18. The optical system as recited in Claim 13 where each of said transmissive spacers has a thickness substantially equal to a focal length of each of said lenses.

19. The optical system as recited in Claim 13 further comprising terminals on an exterior of said device and connected to each of said membranes and configured to provide an electrical current to each of said membranes.

20. The optical system as recited in Claim 13 wherein said optical system further includes an optical switch and said optical forms a part of said optical switch.